WE CLAIM:

1   1.   A computer-readable medium having stored thereon a data structure,

2 comprising:

3   at least one optional data member to render received data functional within

4 a current version of the data structure when optional data is absent from the received

5 data; and

6   at least one construct to render the received data functional within the

7 current version of the data structure when the received data includes wildcard data that is

8 not specified by the current version of the data structure.

1   2.   A computer-readable medium according to Claim 1, wherein the

2 data structure is both backward-compatible and forward-compatible with other versions

3 of the data structure.

1   3.   A computer-readable medium according to Claim 1, wherein the

2 data structure is described by an XML schema.

1   4.   A computer-readable medium according to Claim 1, wherein the at

2 least one construct includes a delimiter followed by a wildcard data member.

1   5.   A computer-readable medium having stored thereon a data structure,

2 comprising:

3   a delimiter; and

4   at least one wildcard member that follows the delimiter to receive wildcard

5   data received in accordance with a different version of the data structure.

1   6.   A computer-readable medium according to Claim 5, wherein the

2   data structure is both backward-compatible and forward-compatible with other versions

3   of the data structure.

1   7.   A computer-readable medium according to Claim 5, wherein the

2   data structure is described by an XML schema.

1   8.   A computer-readable medium according to Claim 5, wherein the

2   different version of the data structure is one of an earlier version of the data structure and

3   a later version of the data structure.

1   9.   A computer-readable medium according to Claim 5, wherein a last

2   occurrence of the at least one wildcard member is followed by an end delimiter.

1   10.   A computer-readable medium according to Claim 5, wherein the at

2   least one wildcard member is to be placed in a location for a schema particle.

1   11.   A computer-readable medium according to Claim 10, wherein a

2   schema particle is any one of a group consisting of an element, a compositor, a group, or

3   an element wildcard.

1   12.   A computer-readable medium according to Claim 10, wherein the at

2 least one wildcard member is to receive wildcard data that is any one of a group

3 consisting of a target namespace, a local namespace, or a global namespace.

1   13.   A computer-readable medium having one or more instructions to be

2 executed by one or more processors, the one or more instructions causing the one or more

3 processors to:

4   receive data common to multiple generations of type;

5   tolerate an absence of optional data from the received data, when the data is

6 received in accordance with a different generation of the type;

7   accept an inclusion of extra data in the received data, when the data is

8 received in accordance with another different generation of the type; and

9   validate a message by inserting the received data into a current generation

10 of the type.

1   14.   A computer-readable medium according to Claim 13, wherein the

2 type is described by an XML schema.

1   15.   A computer-readable medium according to Claim 13, wherein to

2 tolerate an absence of data in accordance with the different generation of the type is to

3 detect no data element in an optional element member for a message.

1   16. A computer-readable medium according to Claim 13, wherein to

2 accept an inclusion of extra data in the received data is to receive the extra data in a

3 placeholder for a message.

1   17. A computer-readable medium according to Claim 13, wherein a

2 current generation of the type includes at least one optional element member and at least

3 one placeholder.

1   18. A computer-readable medium according to Claim 16, wherein the at

2 least one placeholder includes a delimiter followed by an element member to receive the

3 extra data.

1   19. A computer-readable medium according to Claim 16, wherein the at

2 least one placeholder is to receive the further data that is any one of a group consisting of

3 a target namespace, a local namespace, or a global namespace.

1   20. A method, comprising:

2   receiving data in accordance with different type versions;

3   tolerate optional data missing from the received data, when the data is

4 received according to a different type version;

5   receive further data included in the received data, when the data is received

6 according to another different type version; and

7   formatting the received data according to a current type version into a

8 message.

1   21.   A method according to Claim 20, wherein the further data includes
2   the optional data.

1   22.   A method according to Claim 20, wherein the type is described
2   using an XML schema.

1   23.   A method according to Claim 20, wherein to tolerate missing data
2   from the received data is to allow an absent data element in an optional data member in
3   order to validate a message.

1   24.   A method according to Claim 20, wherein to receive further data in
2   the received data is to receive the further data in a placeholder in order to validate a
3   message.

1   25.   A method according to Claim 20, wherein the current type version
2   includes at least one optional data member and at least one placeholder.

1   26.   A method according to Claim 24, wherein the at least one
2   placeholder includes a delimiter followed by a wildcard element to receive the further
3   data according to the another different type version, and wherein further a last
4   placeholder is followed by an end delimiter.

1   27.   A method according to Claim 24, wherein the at least one

2 placeholder is to receive the further data that is any one of a group consisting of a target

3 namespace, a local namespace, and a global namespace.

1   28.   A parser, comprising:

2   means for receiving data in members according to multiple type versions;

3   means for excusing optional data being absent from the received data, when

4 the data is received according to a different generation of the type; and

5   means for receiving further data in the received data, when the data is

6 received according to another different generation of the type.

1   29.   An apparatus according to Claim 28, wherein the type is described

2 by an XML schema.

1   30.   An apparatus according to Claim 28, wherein the means for

2 receiving further data includes at least one construct member having a delimiter followed

3 by a wildcard data member.

1   31.   An apparatus according to Claim 28, wherein the means for

2 receiving further data is placed in a location for a schema particle.

1   32.   An apparatus according to Claim 31, wherein the schema particle is

2 any one of a group consisting of an element, a compositor, a group, or an element

3 wildcard.

1   33.   An apparatus according to Claim 31, wherein the means for

2   receiving further data is to receive data that is any one of a group consisting of a target

3   namespace, a local namespace, or a global namespace.